

PREPARATORY STAGES OF SPHINX VASHTI STRECKER.

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The eggs were obtained by Mr. C. A. Wiley at Miles City, Montana.

Egg. Elliptical, flattened above and below, smooth, green, slightly shining. Under a $\frac{1}{2}$ inch objective it appears slightly marked irregularly. Length 1.6 mm., width, 1.4 mm., height 1.0 mm.

First stage. Head round, sutures not distinct, ocelli nearly forming a circle; pale greenish, slightly reddish around the mouth, ocelli black; width 0.7 mm. Body cylindrical, the segments annulated; with minute setae; whitish green, not shining. Horn long, thick, black, not tapering and only slightly thickened at base, its length 1.1 mm., held nearly erect.

Second stage. Head rounded, higher than wide with some large white granules. Color yellowish green, the mouth pale; width 1.1 mm. Body annulate, dark green with large white granules; seven oblique whitish lateral lines. Feet green with reddish tips. Caudal horn 2 mm. long, heavily covered with short, stiff spinules, black, except at extreme base. The granules are slightly conical, without distinct setae.

Third stage. Head rather square, rounded, higher than wide, flattened in front and on the side, clypeus inconspicuous. Pale green with large white granules and a faint yellow line on each side, not reaching the vertex; ocelli black; width 1.9 mm. Body as before, but the back heavily frosted with white. Lateral oblique lines pale yellow, becoming white dorsally and continued backward in the general white shade. Feet paler than the body. Horn spinulose, pale brown, shaded with black before, behind and at tip, its length 3 mm.

Fourth stage. Head as before; the faint yellow stripe arises at base of antenna before ocelli and fades out before vertex; width 2.9

mm. Body leaf green, heavily covered with large conical white granules and frosted with white dorsally. Oblique lines pale yellow, marked with larger granules, obscurely continued along dorsal area by frosted white streaks. Horn with conical granules which are slightly more slender than those on the body and are each tipped by a minute seta. It tapers to tip and is marked as before. Spiracles white with brown center. Thoracic feet reddish, abdominal ones fleshy brown with black line at extreme tip.

Fifth stage. Head slightly depressed at median suture, rounded, clypeus sublanceolate. Shagreened, green, smooth with inconspicuous white dots and faint yellowish line not attaining the vertex, marked behind by a faint dark shade. Body smooth, annulated; on the posterior edge of joints 2 and 3 an elevated band, thickly studded with smooth white granulation filled in with blackish dorsally. General color soft whitish green, thickly but inconspicuously dotted with white or entirely uniform in color; becoming yellow in the fold of skin before and behind the granulated bands and in the suture between joints 4 and 5. Lateral oblique lines white, each bordered in front by a distinct, narrow, black line with a faint blue shade above and continued by a white shade to the middle of the dorsum, the last pair reaching the horn; but these shades disappear later. Horn greenish white; black above, below and at tip, smooth, shagreened, without setae. Thoracic feet whitish with red tinge; abdominal ones tipped with yellow and black. Spiracles brown centrally, with pale rim.

Pupa. Mahogany brown, shaded with blackish, a short, rounded, free tongue case, 8 mm. Cremaster large, flattened with a short furcation at tip.

Food plant. Snowberry (*Symphoricarpos racemosus*).